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ABSTRACT

During the 1980s the Korean economy will have to undergo far-reaching structural changes. The major problems faced by the Korean labor market continue to be an excessive demand for college graduates and an excessive supply of high school graduates. Their solution requires a renewed national commitment to human resource development with emphasis on technical education and vocational training. Two means of tackling these problems are the establishment of institutional linkages between formal education and vocational training and improvement of the vocational training system. Specific measures that should be taken are (1) revision and clarification of the educational and training goals of vocational junior colleges and high schools, (2) expansion of educational upgrading opportunities for employed workers, (3) expansion of the employment of high school graduates through improvements of their quality, (4) improvement of the practical training facilities of vocational high schools, (5) review of the compulsory training and levy system, (6) establishment of an incentive system to motivate business to provide inplant worker training, (7) improvement in the personnel management of enterprises, (8) nationalization of public training institutions, and (9) establishment of an autonomous public agency for training and skill tests. (YLB)

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Human Resources Planning in the Republic of Korea

Improving Technical Education and Vocational Training

Kye-Woo Lee

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Kye-Woo is deputy chief of the Education Projects Division in the Latin America and Caribbean Regional Office of The World Bank

ABSTRACT

This paper has been derived from the Consultative Program for the Fifth Five-Year Plan (1982-1986) of the Republic of Korea, organized and financed by the Government of Korea, the World Bank, and the United Nations Development Program in 1980/81. The paper aims at providing a sound basis for human resources planning for the 1980s during which the Korean economy will have to undergo far-reaching structural changes. It starts with an analysis of labor market problems with special reference to the demand for, and supply of, technical and skilled workers. The paper then focuses on ways of facilitating institutional linkages between formal education and vocational training, the two major sources of technical manpower; effective use of trained manpower; and the means of improving the national vocational training system. The Korean system is compared with other systems, especially those adopted in many countries in Latin America.

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I. INTRODUCTION

Development Policies and Strategy

1.1 During the Fourth Five-Year Development Plan period (1976-81), the Korean economy started to undertake a fundamental structural change towards the development of heavy industries (petro-chemical, machinery, shipbuilding, etc.). Although there already have been some indications that a better balance should be struck between the traditional, light industries and the newly developing heavy industries, few people would argue against the need, in the long run, for a structural change in production and exports. With little resource endowments and the limited size of the domestic market, the development of the Korean economy will have to continue depending on an outward-looking development policy and export-oriented industrialization strategy.

Major Issues Facing Development Policies

1.2 This development policy and strategy recently began to encounter a serious challenge in both the international export market and the domestic labor market. In the international market, the competitive edge enjoyed by Korean exports has been gradually eroded. The late starters among developing countries are rapidly catching up with the relatively simple technology adopted by Korean industries; moreover, the wage rate of the late starters is much lower than that of Korea and is growing at a much slower pace. In the domestic labor market, despite the rapid increase in the supply of managerial, technical and skilled workers, the demand for these workers has exceeded the supply. Therefore, on the one hand, pressures are building up for

the Korean economy to develop those industries that adopt relatively advanced technologies but are less efficient in the developed countries; on the other hand, the need has to be met for containing the rapid increases in the wage level or increasing worker productivity at a faster rate than the growth of wages and, at the same time, improving efficiency in the management of business enterprises.

Problems in the Labor Market

1.3 The major problems faced by the Korean labor market in recent years were an excess demand for college graduates and an excess supply of high school graduates. These problems are expected to recur during the Fifth Five-Year Plan period (1982-86) once the economy hits the bottom of its current cyclical change. Sharp increases in the salary level of college graduates pulled up the wage rate of technical and skilled workers in excess of the growth of worker productivity, thus contributing to the erosion of the competitiveness of Korean exports in the international market. In 1979, for example, labor productivity increased by 15.5%, while the wage level rose by 28.3%. The rising demand for college graduates also promoted increases in the wage rate of the white collar workers and widening wage differentials between college and high school graduates. Such a distortion in the labor market was caused by many interrelated factors, the most conspicuous being the wage and salary system which is based on the credentials of the formal education system and the labor market which is highly segmented by educational level. The excess demand for, and salaries of, college graduates -- as exemplified by the widening wage differentials

between college and high school graduates (100% versus 40%) -- was not offset by the excess supply of high school graduates.

1.4 The demand for, and salaries of, college graduates have been affected by institutional, social, cultural and demographic factors. These include:

(a) Irrational criteria for recruitment, promotion and compensation. The age-old tradition of emphasizing academic credentials, instead of professional capability and proficiency, is an important factor in promoting the demand for college graduates. This tendency is not confined to the private sector. The public sector follows the same practice. Many positions in the civil service and public enterprises do not require college education, but those who have college education are preferred in recruitment and promotion due mainly to the tradition and prestige, and get automatic increases in compensation. For example, about 30% of the four-year college and university graduates in 1979 (about 10,000) were employed in clerical, sales, production and service positions which do not require a college education (Table 1).

Table 1

Employment of College Graduates

by Occupation, 1979

	'000	%
Scientists, engineers, technicians	19.6	56.8
Administrative workers	1.2	3.5
Clerical workers	5.8	16.8
Sales workers	0.6	1.7
Service workers	1.0	2.9
Agricultural workers	0.4	1.2
Production Process Workers	1.9	5.5
Other Workers	0.6	1.7
Military	3.3	9.6
Total	34.5	100.0a/

a/ The percentages do not add up to the total because of rounding.

Source: Statistical Yearbook on Education, Ministry of Education 1979.

(b) Lack of opportunities and incentives for nonformal education and training. The recruitment, compensation and promotion system lacks any channel or incentive for a non-college graduate to pursue a career in the enterprise, in which he or she is employed, without recourse to the formal education system. The shortcut in career development is to pursue a higher education degree, rather than to improve one's skills and proficiency on the job and acquire knowledge through nonformal education, since the compensation and promotion system is based mainly on the attainment of formal education, and the opportunities for nonformal education available to non-college graduates are virtually nonexistent.

(c) Pre-modern style of business management. The management style of Korean enterprises remains in the pre-modern phase and lacks a division of labor, specialization, and a job analysis and description. Managers tend to assign workers without investigating the job requirements and matching skills and capability of workers. The managers tend to believe that the higher the level of formal education of a worker, the better will be his performance and productivity. Therefore, it is assumed that job-specific skills and requirements would be met by a higher level of formal education, rather than by non-formal training

programs geared to the job. There is need to develop a rational and systematic personnel management system.

(d) Primary relationship and excess demand for college graduates. The irrational primary relationship (established especially with government officials on the basis of school alumni, hometown, etc) and social prestige have worked in favor of the demand for college graduates, who have a better possibility than non-college graduates of building up an intimate relationship with ranking officials of the government and business society. Benefits accruing from the irrational behavior or factors have not been properly assessed against the higher labor costs involved. As the wage and salary system has been built on the basis of the credentials of the formal education system, labor cost per worker (and consequently the total labor cost of an enterprise) is bound to increase. Together, these factors characterize the traditional management style of Korean enterprises and point to the need for modernizing the management and administration of enterprises.

1.5 On the supply side, the following factors have been prevalent:

(a) Low quality of vocational schools and colleges. The quality of secondary and post-secondary education has remained below the expectation of business enterprises and is inadequate to enable non-college graduates to

substitute effectively for college graduates. The high school graduates' weak areas most commonly pointed out by employers are a lack of proficiency in foreign languages and inadequate writing capability in the national language. A number of businessmen indicate that many activities being performed by college graduates could be delegated to high school graduates if they would improve their writing capabilities and proficiency in a foreign language. This deficiency in high school education causes employers to hire college graduates. As the wage and salary system is linked to the credentials of the formal education system, more youths seek higher education while places at higher education levels are limited. This has accentuated the already keen competition for higher education places.

(b) Confusion about educational goals and objectives. The educational goals and orientation of secondary and post-secondary educational institutions and programs are confused and overlapping. In particular, the vocational and technical high school has deviated from its educational objectives in order to meet the short-term goal of skill tests and has followed the curriculum of the vocational training centers. The junior college has emulated the curricula of the four-year

colleges and universities and thus has lost its own role and identity.

(c) Excess supply of high school graduates. The number of high school graduates entering the labor force will greatly increase and therefore the need for effectively preparing these graduates to enter the work force will become an important issue. Due partly to demographic factors and partly to social aspirations, the number of middle school graduates progressing to high school is steadily increasing, as is the number of high school graduates. As the progression rate of middle school graduates has now reached more than 80% and is expected to increase to 90% by 1990 as a result of the government's policy for providing compulsory and practically free education through the 9th grade, their preparation for entering the work force is a relatively less important issue. Conversely, however, the preparation of high school graduates -- especially general high school graduates -- for the job market will become an important issue, inasmuch as the effective demand for college graduates will be constrained by the government's ability to expand the number of student places in the colleges and universities and the employers' efforts to

replace high-paid college graduate with lower-paid high school graduates can be expected to accelerate as the wage differential between the two groups increases. Moreover, it is expected that an increasing proportion of high school graduates will be available for work. The present work force participation rate of the high school age-group is relatively low compared with that of other industrialized countries (Table 2).

Table 2

Comparison of Urban Labor Force Participation Rate of the Age Group: 15 - 19

	Males	Females
Korea (1963-71)	34	34
Japan (1965)	41	40
Panama (1960)	39	32
Sweden (1965)	48	42
United States (1960)	43	30

Source: The World Bank, Korea: Policy Issues for Long-Term Development (Baltimore: Johns Hopkins University, Press, 1979), p. 191.

1.6 At present, Korean high school graduates are not oriented and prepared for entering the work force, and only about 30% of them can be admitted to college or university. Although the government intends to increase the number of places available in the colleges and universities to accomodate about 55% of the high school graduates throughout the period 1981-91, the number who cannot be admitted to higher education is expected to increase from about 260,000 in 1979 to 290,000 in 1985 and to 340,000 in 1990. On the other hand, middle school graduates who do not progress to high school are expected to decrease from about 150,000 in 1979 to 120,000 in 1985 and to 55,000 in 1990 (Table 3). The ever-increasing number of high school graduates who cannot be admitted to higher educational institutions has created a keen competition for entrance to college and other side effects; these include private tutoring (e.g., about 90% of the students of one high school class in Seoul are taking private tutoring), maldistribution of the national resources for education, adverse effects on in-school instructional programs and on equity in the availability of educational opportunities among different income groups, and the creation of social rifts and anxiety. Therefore, an important issue is how the transition of high school graduates from the formal school system to the world of work can be facilitated while at the same time satisfying their aspirations for higher education and career development.

1.7 In the following sections, some suggestions are offered on tackling the issues and problems discussed above. This is done mainly through the two topics: (a) establishment of institutional linkages between formal education and vocational training, and (b) improvement of the vocational training system.

Table 3

Projections on the Number of Graduates and Entrants at Different Educational Levels

Year	Primary		Middle School				High School				College & University	
	Graduates ('000)	Promotion Rate (%)	Entrants ('000)	Enrollment Rate (%)	Graduates ('000)	Promotion Rate (%)	Entrants ('000)	Enrollment Rate(%)	Graduates ('000)	Promotion Rate(%)	Entrants ('000)	Enrollment Rate(%)
1977a/	891.6	86	765.5	81	651.1	76	494.0	48	360.3	30	109.8	10
1976a/	890.1	93	827.1	91	727.0	79	575.6	56	442.4	41	181.9	12
1980b/	859.8	95	814.7	92	737.7	80	590.8	61	464.6	50	231.9	15
1985c/	877.8	99	864.7	96	828.2	85	706.0	75	611.0	54	326.9	28
1990c/	776.4	100	776.4	98	781.6	90	727.0	83	718.2	53	376.9	31

a/ Actual

b/ Preliminary

c/ Projections

Source: The Korean Educational Development Institute (1980).

II. INSTITUTIONAL LINKAGES BETWEEN FORMAL EDUCATION AND VOCATIONAL TRAINING

Setting the Educational Goals of Vocational Junior Colleges and High Schools

2.1 Prior to the Fourth Five-Year Plan (1976-81), it was generally understood that the technical vocational high schools would foster broadly educated technicians to support scientists, engineers and other professionals and that the vocational training centers, both inside and outside the plants, would train skilled and semi-skilled workers who would support the technicians. At the outset of the Fourth Plan period, the vocational junior colleges were proliferating, the demand for craftsmen was sharply increasing and the traditional educational goals were gradually changing. The traditional role of the vocational high school has been taken over by the newly created junior colleges, and the vocational high schools have also been asked to train craftsmen who at the end of the school period can attain the 2nd Class Craftsman Certificate, attainment of which was regarded as a goal of vocational training centers. This change has not only created confusion about the role of the junior colleges versus the full-fledged colleges, but also the role of the vocational high schools versus that of the vocational training centers. This confusion has been accentuated, as the junior colleges have emulated full-fledged colleges in their instructional programs without taking into account their graduates' current and expected role in the work forces. Moreover, the compulsory skill test required for graduates of vocational high schools as well as vocational training centers has further aggravated the situation.

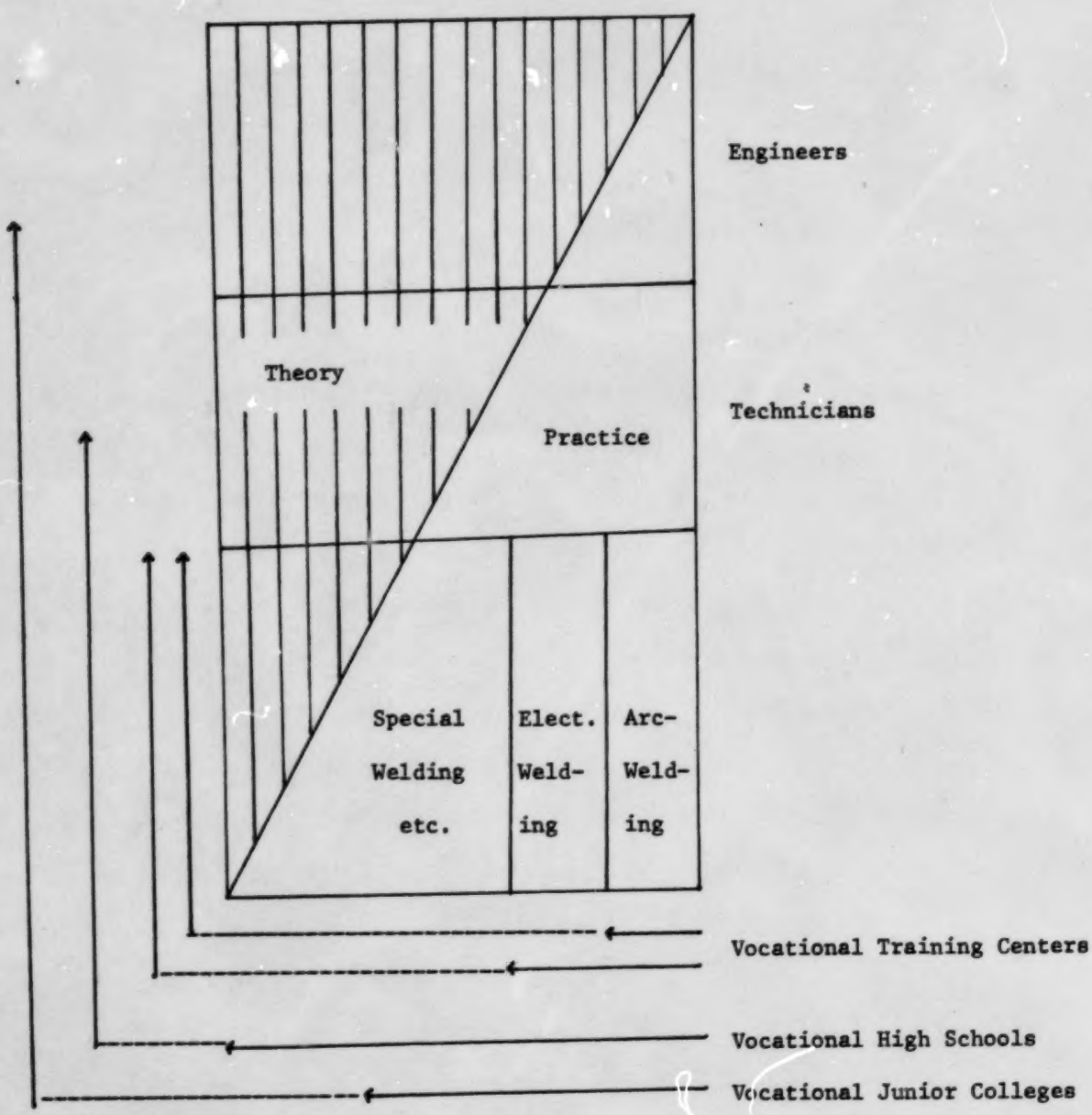
2.2 To improve the cost-effectiveness of the instructional programs of these educational and training institutions at different levels, it is

imperative to define the goals of each program clearly. Theoretically, the role of junior college graduates can be defined easily. However, the personnel management of private enterprises is not sufficiently modernized or systematically prepared to enable the enterprise to recruit and place junior college graduates. The potential activities and tasks that can be effectively undertaken by junior college graduates should be identified and defined through job analysis in the business enterprise. Also, the usefulness of junior college graduates for certain activities and tasks should be widely disseminated to business personnel management.

2.3 With respect to the role of the vocational high schools, it should be emphasized that these schools will train craftsmen who have been trained more broadly and have acquired more theoretical knowledge than the trainees of vocational training centers. For vocational school students, for example, passing the 2nd Class Skill Test should be a necessary but not sufficient condition for conferring a high school diploma. If a business enterprise pays a higher wage to a vocational high school graduate than to a trainee of a vocational training center, this differential should be justified on the grounds that the employer is buying broader skills and the potential for the employee to advance his skill level and technical knowledge. This potential can be realized because the vocational high school graduate has devoted more hours to practice as well as to theory during his school years than the trainee of a vocational training center is able to do in one year after graduation from a middle or general high school. The proposed differentiation in the objectives of the instructional program between the three types of institutions is depicted in Chart 1. From this viewpoint, the current

CHART 1. Illustration of the Goals and Content of Vocational High School, Junior Colleges and Vocational Training Centers

(e.g. Welders)



curricula of the four types of technical high schools (general, specialized, mechanical, and pilot) should be unified into the curriculum of the general technical high school. This general curriculum in technical education will act as a built-in flexibility against the shortcomings of using the technical education system as a main source of meeting short-or medium-term manpower requirements.

2.4 Some may argue against the idea of training vocational or general high school graduates to function as craftsmen, on the grounds that a high school education is an excessive requirement for craftsmen. However, it would not be an excessive requirement for Korean craftsmen in view of the more sophisticated technologies being adopted by many business enterprises and the abundance of high school educated workers. The requirement of a high school education for craftsmen would also help Korean exports to retain their advantageous position in international competition. At present, general high school graduates already account for more than 70% of the trainees in the vocational training centers.

Expansion of Educational Upgrading Opportunities for Employed Workers

2.5 The current technical education and vocational training institutions, either formal or nonformal, offer only basic education and training programs for the placement of their graduates, and they lack nonformal programs for the upgrading of workers already employed. Some existing part-time or evening courses offered by secondary schools and junior colleges are likewise geared to the diplomas conferred by the formal education system and are not linked to the acquisition and

certification of skills, techniques or practical knowledge. Therefore, all workers graduating from the school system at different levels have no channels of improving their technical and professional knowledge or skills once they undertake employment. The career development, upgrading or the recently emphasized lifelong education, is understood as to be equivalent to pursuing a higher degree in the formal education system. This trend, if continued, will have a deleterious effect on the advancement of technology and skills and ultimately on the quality of the work force. This traditional practice may have been caused partly by the lack of nonformal programs offered by the technical education and vocational training system and partly by the lack of an effective incentive system for pursuing nonformal education and training in both public and private enterprises. Another reason for the lack of upgrading programs for employed workers is that the wage and recruitment regulations of these enterprises are based on the credentials of the formal education system.

2.6 If Koreans believe in "leap-frogging" economic development and want to remain competitive in the international market in terms of technical know-how and skill levels, it is urgent that the government organize systematic programs for upgrading employed workers. As mentioned in the discussion of the vocational training system in Chapter III, other countries competing with Korea in the international trade market have already launched nationwide programs, supported by national legislation, for upgrading employed workers and have also provided

strong fiscal incentives to those enterprises that undertake upgrading programs.

2.7 In order to develop a system for upgrading the technical and skill level of employed workers, the government should launch a nationwide campaign to remove the "irrational factors" in the hiring, promotion and compensation system and practice, and should require all the educational and training institutions (public and private, formal and nonformal) to offer nonformal education and training programs. Courses to be offered in this Open Education System need not be linked to degrees or diplomas conferred by the formal education system, but instead should be linked to the National Technical Qualification Tests. Theoretical subjects essential for passing the Technical Qualification Tests could be offered by all high schools, junior colleges and universities, especially vocational high schools and technical colleges. Practical subjects could be provided by the vocational high schools (both technical and business) and by the junior colleges and vocational training centers (both public and private). The courses should not necessarily be taken on a whole program basis alone, but also on a module basis for credit, either in the evening, on a day-release basis or weekends. Courses should not be limited to industrial skills, but should include commercial and business skills; nor should the target groups be limited to technical or skilled workers but should include administrative and managerial personnel. Technical and skilled personnel would benefit the most from such a nonformal education and training program. The quality of production process workers at the

entry level is presently controlled by the 2nd Class Craftsman Test. But there are no established channels for these craftsmen to improve their technical knowledge and skills to enable them to attain a higher class.1/ The only available opportunity for continuing education is provided by the evening schools and colleges; however, the courses offered by these institutions are not linked to the advanced level of the National Technical Qualification Tests, but to the higher degrees of the formal education system, and therefore they have little relevance to the advancement of technical knowledge and skills required on the job.

2.8 Other possible channels for providing such a nonformal program are mass media educational programs (television, radio or correspondence) for employed workers. Theoretical subjects can best be imparted to such workers through multi-media programs combining radio, TV and correspondence courses with periodic face-to-face instruction, as demonstrated by the Radio and Correspondence College and High School Programs.

Facilitating Employment of High School Graduates

2.9 It cannot be over-emphasized that the quality of high school education should be substantially improved to alleviate the excessive demand for college graduates through the substitution of high school

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1/ One exception in this respect is the compulsory upgrading program for civil engineers licensed by the Ministry of Public works. All civil engineers licensed by the Ministry are obligated to take a month-long training course at the Ministry's Civil Engineers Training Center, starting from June 1980. Such an upgrading program, however, could have been more effectively and economically managed by the universities rather than by a separate government training center.

graduates for college graduates, as well as to reduce the number of unemployed high school graduates. Promotion of the employment of high school graduates has a long way to go; it is a fundamental means of dampening the excessive demand for college education, ameliorating the adverse impact of private tutoring, and keeping a lid on the wage level of college graduates.

2.10 Improvement of the Quality of High School Graduates. The most critical means for promoting the substitution of high school graduates for college graduates in the work force is to strengthen the high school graduates' writing skills and their proficiency in foreign languages. Teaching of the national language should go beyond improvement in the multiple choice technique, and instruction of foreign languages should concentrate on teaching one foreign language, supported by the use of modern teaching materials and techniques, coupled with the upgrading of foreign language teachers.

2.11 Towards A Comprehensive Secondary Education. In the long run, a new type of general secondary high school should be developed to facilitate the employment of high school graduates and provide high school students with a broader preparation for higher education. Since a substantial portion of high school graduates cannot be admitted to the institutions for tertiary education, it would be practical to prepare them gradually for the world of work during their schooling, as is being done in the comprehensive high schools in the United Kingdom and the United States. During the first year of high school, the students would be exposed, on a rotational basis, to different practical subjects and workshops (e.g., mechanical, metal work, construction, electronics,

business, home economics). At the beginning of the second year, a student would select one specialty among the practical courses. With the advent of the third year, if a student firmly decides to seek employment upon graduation, he or she would receive intensive training in one specialty just as vocational high school students. This curriculum would enable those students who are pursuing higher education to acquire a broad education they need for life in a modern industrialized society, while the students who plan to seek employment after graduation would receive vocational training, thus obviating (or minimizing) the need for intensive vocational training prior to employment. This curriculum should be introduced in densely populated urban areas for the group of schools on a pilot basis, because its implementation in a comprehensive secondary school system requires workshops and laboratories as well as well-trained instructors and managers, which are too costly to be provided to all general high schools. If it is introduced across the board, this curriculum is likely to create false expectations about the quality of the graduates, as observed in more than ten years of lending operations of the World Bank; the comprehensive secondary school curriculum simply cannot allocate an adequate time for students to attain marketable skills. Introduction of the curriculum in a densely populated area would enable one school or a common facility center to be used by several other schools, either comprehensive or vocational, on an economical basis.

Improvement of the Practical Training Facilities of Vocational High Schools

2.12 Since the vocational high schools should be the main source of craftsman training, it is essential that their quality be progressively improved. If the results of the National Technical Qualification Tests are indicative of the quality of these schools, their practical training programs are inferior to those of the vocational training centers (VTCs). While almost all VTC trainees passed the 2nd Class Craftsman Tests in 1978, only 70% of the vocational high school graduates passed these tests. This difference may be attributable to the better, practical training facilities in the VTCs. Even among the vocational high schools, the test results generally correspond to the provision of practical training facilities. Better provision of practical training facilities in these schools and in the junior colleges would not only enable them to improve their programs for basic training, but also to offer nonformal programs for the upgrading of employed workers. Moreover, adequately equipped vocational high schools could function as common facility centers and thus facilitate the introduction of a comprehensive secondary school system.

III. IMPROVEMENT OF THE VOCATIONAL TRAINING SYSTEM

Review of the Compulsory Training and Levy System

3.1 Since the promulgation of the Vocational Training Law in 1966, the vocational training system in Korea has come a long way in complementing the formal education system in the training of craftsmen. In particular, with the advent of the Fourth Five-Year Plan (1977-81), the

in-plant training program, has made vocational training one of the essential activities of business enterprises. The compulsory in-plant training system is also complemented by the public vocational training system, which has substantially expanded its network and improved its quality owing to the compulsory skill testing system.

3.2 Nevertheless, the compulsory training and test systems have not yet succeeded in motivating business enterprises to take the initiative in carrying out a vocational training program for improving the quality of their workers. The most visible evidence of this is the absence of upgrading programs in the business enterprises. All in-plant training programs have thus far been limited to basic skill training of new entrants to the work force. Even those firms that have an in-plant training program train far fewer workers than are needed annually for recruitment. For example, one in-plant training center, which can be regarded as a model for the rest of the business enterprises, trained less than a third of the newly recruited craftsmen during 1977-1979; all the rest were trained either in schools or other firms. (Table 4).

3.3 Among the developing countries, the levy system has been most actively developed in Latin American countries, notably Brazil and Colombia. In Brazil, an autonomous national vocational training organization (SENAI) was established in 1942, financed with the levies imposed on the payrolls of the workers of all industrial firms at a rate of 1% (Law N° 4048). In 1946, a similar organization was

Table 4

Comparison of the Number of New Recruits and In-Plant Trainees

(An Auto Manufacturing Firm with a Typical In-Plant Training Center)

Year	Total Number of Workers	New Recruits of Production Workers						
		Total	In-Plant Training	Outside of the Firm				
				Subtotal	Voc. High School	Other Firms	Other Training Centers	Others
1977	2,137	925	123	802	296	296	46	203
1978	2,548	890	209	681	147	311	53	170
1979	2,893	911	242	669	194	346	72	57

Source: Office of Labor Affairs, 1980.

established in the commercial sector (Law No. 8621) and was later adopted by other Latin American countries and even by the United Kingdom in 1962. During its 30 years of operation, however, many Latin American countries discovered weakness in the system and modified it with a number of improvements. The weaknesses were: (a) the Levy System failed to motivate entrepreneurs to voluntarily undertake a training and upgrading program; (b) entrepreneurs thought that once they had paid the levies they did all that was necessary for training their workers; (c) the system increased unit labor costs and imposed a burden on business enterprises in competing in the international markets; (d) the increases in labor costs promoted the use of labor-saving technologies and capital-intensive industries; (e) the collected levies had never been sufficient to finance the public training programs needed to meet the private sector's requirements for technical and skilled manpower; and (f) at the national level, the earmarked payroll taxes lacked elasticity with respect to the training need and cost, and made resource allocations inefficient.

3.4 The levy system in Korea, introduced by the 1976 amendment to the Vocational Training Law, differs from the Latin American model in two respects: (a) while the Latin American model requires establishments (normally with 5 or more workers) to pay levies as a matter of principle and allows the in-plant training scheme as an exception, the 1976 Law requires the relatively larger firms (with 300 or more workers) to provide in-plant training as a matter of principle and the payment of levies

as an exception; and (b) the Latin American model imposes the payroll tax at a fixed rate, whereas the 1976 Law adopts a levy system based on the average in-plant training cost. The Korean model has the advantage of ensuring the establishment of an in-plant training program; however, it was a mandatory system and was never based on the voluntary initiative of the entrepreneurs. Furthermore, the Korean model also suffers from some deficiencies noted in the Latin American model.

3.5 The Korean model has additional weaknesses developed during its operation.

(a) The in-plant training scheme lacks teeth; since the trainees are not subject to compulsory skill tests, the quality of the in-plant training program cannot be ensured.[1/] If the training program were initiated voluntarily by entrepeneurs, a quality control mechanism would be redundant. It is estimated that about 10% of the trainees of the in-plant training program would pass the 2nd Class Craftsman Test.[2/] One way to ensure the high quality of an in-plant training program would be to inspect and supervise its operation, but this is neither an economical nor a perfect solution. An alternative would be to make the skill test com-

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1/ Skill tests are mandatory to graduates of junior vocational colleges, high schools and public vocational training centers.

2/ Almost all trainees of public vocational training centers passed the 2nd Class Craftsmen Test.

pulsory for the trainees of an in-plant training program and collect levies corresponding to those trainees who failed the test.

(b) The training levy is supposed to be collected on the basis of the average recurrent expenses incurred by the in-plant training of a worker employed by the enterprise, but the actual amount of the levy has never been adjusted to the level of real costs. In 1979 the average unit training cost was estimated at 540,000 won,3/ but the actual average levy on a worker was about 131,000 won, or less than 25% of the unit training cost. Hence, there is a great imbalance between those firms that conduct in-plant training programs and those that pay levies in favor of the latter. Moreover, the unit training costs do not take into account the capital expenses incurred in the preparation of training facilities; the system penalizes those firms that conduct in-plant training programs (about 60% of all the firms obligated to do so). This situation works against the objectives of the system (Table 5).

(c) The requirement of in-plant training appears to be excessive for firms that employ fewer than 500 workers as it is often difficult for them to organize classes of an economical size for in-plant training. Under-

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3/ One US dollar corresponded to 638 won in 1979.

TABLE 5

The Situation of In-Plant Training and Collection of Training Levies (1979)

	Total		By Numbers of Workers					
			300 - 499		500 - 599		1,000 +	
	Number	%	Number	%	Number	%	Number	%
Number of Obligated Enterprises a/	1,215.0	(100)	430	(35)	372	(31)	413	(34)
for in-plant training	731.0	(60)	198	(27)	207	(28)	326	(45)
for training levies	484.0	(40)	232	(48)	165	(34)	87	(18)
Number of Employees to be trained (000) b/	119.8	(100)						
by in-plant training	91.0	(76)						
by training levies	28.8	(24)						
Annual Training Levies (per worker) c/	131,892 won							
Average Actual Training Expenses (per worker) d/	538,380 won							

a/ Establishments with 300 or more workers are obligated to carry out in-plant training.

b/ By ministerial decree, 6.7% of all workers in an enterprise were to be enrolled in the basic skill training program in 1979.

c/ On the basis of the expenses of the six-month training courses.

d/ A sample survey made by the Office of Labor Affairs.

Source: Office of Labor Affairs.

standably, these firms are paying levies and will continue to face difficulties in obtaining trained workers.

Towards the Establishment of an Incentive System

3.6 In light of the above observations, it is recommended that during the Fifth Five-Year Plan period the government devise a strong incentive system to help motivate business enterprises to voluntarily provide in-plant training for their workers. A few countries which compete with Korea in the exportation of goods and services to OECD countries, and which experimented with the training levy system for a long time, have already instituted a strong fiscal incentive system to promote voluntary in-plant training (e.g Brazil's 1975 Law of Fiscal Incentives for Vocational Training -- No. 6297; Chile's 1976 Training and Employment Law). It should be noted that the groundwork for the present vocational training system was laid during the 1960s on the basis of the government's subsidies and assistance to a few large firms, and that the rapid rise of Korean exports during the 1960s and 1970s is attributable mainly to the strong fiscal and financial incentive system rather than a compulsory export quota system. Apparently the private rate of return of in-plant training is much lower than its social rate of return, especially in the short and medium term. In the absence of strong incentives, therefore, it is too idealistic to expect that a business enterprise, whose primary objective is profit maximization, operates a high-quality in-plant training program voluntarily to

discharge its social responsibility of providing training opportunities for the members of the society. On the other hand, as the experience of Latin American countries has demonstrated, the provision of technical manpower or skill upgrading cannot be exclusively carried out by the public training institutions. If training needs are to be met only by public training institutions, the system would deprive private enterprises of an incentive to train their workers for improvement of skills and technologies. At the same time, the public training institutions would be overwhelmed by the enormous training task and would suffer from inefficiency and inflexibility.

3.7 The kinds of incentive systems to be developed may vary, depending on the emphasis given to the training and upgrading of workers. In view of the importance of adopting new technologies and upgrading the skills of industrial workers during the coming decade, the initiatives must be strong and broad enough to cover not only basic skill training at the entry level, but also upgrading programs for employed workers. More specifically, the government should provide a fiscal incentive system that would allow private enterprises to deduct twice the amount of all expenses (both recurrent and capital) incurred in training their work force at all levels, up to a certain limit (say, 10%) of their taxable income. If the amount deductible on the basis of one year's training expense exceeds the limit, the enterprise should be allowed to carry forward the excess amount for deduction over a period of time, say, three years.

3.8 To be eligible for the tax deduction, the enterprise should prepare a proposal for the training of its workers in different fields and at varying levels (craftsmen, administrative and managerial staff) and obtain the approval of the government agancy responsible for training. As a safeguard against poor quality training, the training expenses could be computed on the basis of the number of trainees who pass the national skill test in those fields for which a test is offered by the public testing agency. For such a fiscal incentive system to be effectively implemented, all public and private educational and training institutions should be examined and mobilized to open up their facilities to offer nonformal training courses. Medium-sized firms should be encouraged to enter into a contract with a training institution outside the firm for the implementation of its training program. Thus, there would be no need to limit the size of firms that would be responsible for carrying out the in-plant training program.

3.9 One advantage of this proposed system is that it would ensure a close linkage between industry and educational training institutions as well as a flexible and efficient use of public training institutions. The system also has a built-in flexibility with respect to the economy's cyclical changes, because the incentive system is linked to the taxable income of a firm. If this income increases (or decreases), the need for training additional workers or for upgrading workers may increase (or decrease) and the deduction from the firm's taxable income could be

in proportion to the number of workers to be trained. Moreover, during an economic downturn, business enterprises and training institutions could give more emphasis to upgrading their personnel than to basic skill training of new entrants; the latter category of workers is supposed to be declining.

3.10 The proposed incentive system may not please the policy makers in the Ministry of Finance, since in the short run the system would work against a rapid increase in tax revenues.[1/] But the time has come to consider the long-term implications of this policy measure if the Korean economy is to undergo a structural change conducive to the accumulation of technology and skills as well as physical capital. A cost-benefit analysis made in Brazil, where a similar incentive system was adopted, indicates that in the long run the benefits in terms of increased productivity of trained workers and consequent increases in income and higher taxes exceed the current losses of potential tax revenues. A similar analysis of the Korean situation is advisable in order to convince the tax-policy makers of the need for an effective incentive system. If they are convinced, even a stronger package of incentives could be suggested. For example, as used in Japan for the development of new technologies, progressive deductions from a business enterprise's income taxes could be allowed on the basis of additional

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1/ Even after the adoption of the proposed system, the absolute amount of corporate income tax revenues would increase, rather than decrease.

or incremental training expenses incurred over the previous year.

Improvement in the Personnel Management of Enterprises

3.1 An incentive system for voluntary in-plant training and upgrading should be supported by corollary or complementary measures. In particular, the government should strengthen its activities designed to improve the managerial capacity of business enterprises, especially their personnel management, in order to promote the employment of high school graduates, encourage workers to enroll in upgrading courses offered both inside and outside the enterprise, and establish a recruitment, promotion and compensation system based on professional capability rather than academic credentials. In this respect, both the Ministry of Commerce and Industry and the Office of Labor Affairs should formulate a program to promote consultation with private enterprises. These enterprises should be encouraged to review their regulations for recruitment, promotion and compensation and to make revisions in the regulations that would help to build up incentive systems for staff upgrading. For example, at present there are no incentives or training channels for craftsmen who passed the 2nd Class Skill Test to strive for attainment of the 1st Class Craftsman Certificate, as this skill test certificate has nothing to do with promotion and compensation. Business firms should also be asked to undertake a job analysis in order to identify the professional knowledge and skills they need and then use the results in recruitment, training and promotion. In this regard, the government, through the civil service and the public corporations, should set an example, such as by ensuring that 5th grade civil servants are recruited from among high school graduates, not college graduates.

Rationalization of the Public Training Institutions

3.12 By the end of the Fifth Five-year Plan period, the Office of Labor Affairs expects to complete the establishment of 25 vocational training centers. In 1979, other agencies at the central government level were already operating 50 centers and the provincial governments were operating 16 centers (Table 6). While these centers especially those established under the Office of Labor Affairs, are well equipped and maintain a high standard of training, they need to be further improved. Some improvement that could be made in the public vocational training system are set out below.

Table 6

Number of Training Centers and Trainees (1979)

	Training Centers	Trainees
In-Plant Training	575	81,005
Public Training	88	25,360
(a) Juridical Persons (OLA)	22	13,160
(b) Central gov't Agencies	50	5,000
(c) Provincial Gov't	16	7,200
Authorized Training	33	10,760
Total	696	117,185

Source: Office of Labor Affairs (OLA).

3.13 Closer Ties with Private Enterprises. First of all, the public vocational training centers should strengthen their ties with private enterprises. Two approaches for doing so are described below.

(a) Selection and placement of trainees: At present, the centers select their trainees according to their own plan without references from private enterprises. While this practice may not create serious problems so long as economic activity expands, it is likely to create placement problems during an economic downturn. It is desirable for the centers to select trainees referred by private enterprises that are potential employers of the trainees, or to train those workers who have been selected by private enterprises for employment or training. This method avoid the problem of trying to place the graduates and a duplication of effort in the selection and placement of trainees or competition among centers. It would also allow the training centers to adjust the type of courses (basic skill training, upgrading or retraining) and the number of trainees in each course to the ups and downs of economic activity; A center's lack of ties with employers is likely, in the long run, to create a problem with respect to the relevance of the training provided by the center.

(b) Research and consultancy on training: The public training centers should build up their capability to provide consulting services to private enterprises in a number of areas related to training and technology. For example: identification of training needs, organization and planning of training and upgrading, management of in-plant training programs, evaluation of these programs, and dissemination of innovative training technologies such as the module system, individualized training, the dual training system, and the production and training system, the public training centers should endeavor to develop a series of new activities, especially research and development related to training and personnel mamangement. While not every center can develop a full range of research activities, each center should at least have the capability to collect and analyze training-related problems and to disseminate the new training methodology. At the headquarters of the public vocational training network, more fundamental research and development activities could be developed, including job analyses and experimentation with new training curricula, materials and techniques.

3.14 Mobile Training. The public training centers should serve as a base for expanding the network of public training. At present, these centers are located in major and medium-sized cities and industrial parks

and are fairly evenly distributed throughout the country. Although further investments in the establishment of vocational training centers are desirable, the training network can be expanded to serve other industrializing cities and towns if the existing centers are supported by mobile training programs. These programs would be particularly useful in extending training services to the rural or agricultural areas surrounding industrial parks or industrializing towns. According to the projections of the Ministry of Agriculture and Fisheries, the number of agricultural workers is expected to decline by about two million during the next ten years (from 4.7 million in 1979 to about 3.0 million in 1991). Despite the rapid increases in the nominal wage rate in the rural areas, it is suspected that the value of the marginal product of labor still remains below the level of the agricultural real wage and that the labor surplus condition or phase (following the definition of Professors Fei and Ranis) has not yet ended. Therefore, the further exodus of agricultural workers from the rural areas is desirable, and the agricultural mechanization program should be supported to boost agricultural labor productivity. The training program to complement the mechanization program appears to be well organized; however, no training programs have been designed to facilitate the smooth transition of rural, agricultural workers to employment as urban, industrial workers and to train them for jobs in the industrial sector. The public training centers should assume responsibility for providing these programs.

3.15 International Cooperation. Technical assistance in training has become an important means of technical and economic cooperation on both a bilateral and a multilateral basis. The provision of training specialists and instructors, the granting of fellowships and the financing of training materials have all proved to be effective ways to lay the groundwork for economic cooperation and to promote exports in the long-run (e.g., Japan's OETC, USAID, UK's ODM, Canada's, CIDA or Spain's Ministry of Labor). The public training centers, especially the Central Vocational Training Institute, should undertake such activities, in addition to its main responsibility of the instructor training program.

Establishment of an Autonomous Public Agency for Training and Skill Tests

3.16 It is difficult to understand the rationale for the current dual systems of training and skill tests in Korea. While there is a rationale for establishing an autonomous agency for skill testing, the same rationale could apply equally to the creation of an autonomous training agency--training and testing are two sides of the same coin. Since the standards for testing can serve as a useful guideline for training, there is no need to have two separate agencies to administer the two functions. Testing is a powerful tool for controlling the quality of training, and testing standards and their application can effectively direct the objectives and content of training programs. The separation of the two systems has already created irrational operations in both skill testing and training. The occupational classification and standards adopted in training differ from those of testing because they have been developed by two separate

agencies. It is therefore, recommended that an autonomous agency be established that will be responsible for both training and testing.

3.17 The need for establishing an autonomous agency responsible for training as well would be accentuated if the public training centers undertake the new functions suggested in the previous paragraphs: survey and identification of training needs, research and development related to training and personnel management, provision of consulting services for training, extension of the training network via mobile training programs, and international technical cooperation in training. To organize and coordinate all these new activities, it is essential that an autonomous organization responsible for all activities related to the human resources development be established.

3.18 The need for directing and coordinating the regular training activities of the public training centers adds yet another justification for creating the autonomous human resources development agency. The number of these centers has increased sharply and will continue to increase, and their training activities cannot be effectively controlled by the Office of Labor Affairs. The public training centers, especially those established under the Office of Labor Affairs (OLA), are non-profit-making juridical persons, and therefore the staff of each center work in a closed system. The centers need a cross-fertilization of knowledge and experience; at present there is very little communication or transfer of knowledge between them. As each center is too small an organization to develop an economical welfare and career system for the staff, the future of the centers is endangered.

3.19 With an independent testing agency already established, it would be logical to establish an autonomous agency that would be responsible for both training and skill testing.

IV. CONCLUSIONS AND RECOMMENDATIONS

4.1 The structural changes in the Korean economy that are envisaged for the coming decade are fundamental and far-reaching in scope. The problems confronting the labor market are a major constraint to structural change and economic progress. Their solution requires a renewed national commitment to human resource development, with emphasis on technical education and vocational training. Innovative and trail-blazing measures are required, to be undertaken by both public and private enterprises in a spirit of mutual support and cooperation.

4.2 Summed up below are the measures that should be taken during the Fifth Development Plan period (1982-86) in addressing the major issues facing the Korean labor market.

(a) Revision and clarification of the educational and training goals of the vocational high schools, junior colleges and the vocational training centers, in such a way that the junior college will train technicians, and the vocational high school will be the main source of craftsmen, but the latter's instructional goals and programs should be broader than for the attainment of the 2nd Class Craftsman Certificate.

(b) Expansion of the employment of high school graduates through improvement of their quality, especially in writing skills and proficiency in a foreign language; a gradual introduction of

the comprehensive high school education program in the more densely populated urban areas; and the provision of practical training facilities in the vocational high schools; so that high school graduates, who are in excessive supply, can effectively substitute for college graduates, who are in excessive demand.

(c) Expansion of nonformal upgrading opportunities for workers at all levels and in every field, with a view to improving the productivity of employed workers; and the launching of a nationwide campaign for opening all educational and training institutions for the training of employed workers.

(d) Reexamination of the compulsory training and levy system; and the establishment of a strong fiscal and financial incentive system aimed at encouraging the business enterprises to devise and implement voluntary in-plant training programs by allowing them to deduct training expenses from their taxable income.

(e) Modernization of personnel management in business enterprises by undertaking job analyses to identify requirements for professional knowledge and technical skills of each job and by revising regulations for recruitment, promotion and compensation with a view to promoting the employment of high school graduates, encouraging workers to take upgrading courses, and establishing a personnel management system based on professional capability rather than academic credentials.

(f) Rationalization of the public training institutions, by linking them more closely to private enterprises in the selection and placement of trainees and to training-related research, development and consulting activities, by operating mobile training programs in the medium and small-sized cities and the towns in rural areas and by developing international cooperation programs in the field of training.

(g) Establishment of an autonomous public agency to carry out operational programs for the training of workers and for the testing and certification of technical knowledge and skills.

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RCA 248423 WORLDBK
Cable address: INTBAFRAD
WASHINGTONDC